

In the Specification:

Please amend the specification as follows:

On page 1, please insert the following after the title and before the first sentence:

Related Applications

The present application is a 35 U.S.C. §371 national phase application of PCT International Application No. PCT/GB03/00792, having an international filing date of February 24, 2003 and claiming priority to Great Britain Patent Application No. 0204671.2, filed February 28, 2002, the disclosures of which are incorporated herein by reference in their entireties. The above PCT International Application was published in the English language and has International Publication No. WO 03/073436 A1.

On page 2, at line 12, please insert the following paragraph:

The prior art discloses many processes and apparatuses for the reduction of metal oxides to metals by cathodic electrolysis of the oxide in a molten salt. Thus, for example US-A-5378325 discloses a low temperature salt bath for the electrolysis of metal oxides to the corresponding metal, the bath comprising fluoride and chloride salts and including a low surface area carbonaceous anode. Alternatively, WO-A-00/40872 teaches a cell for the electrowinning of aluminium from alumina dissolved in a fluoride-containing molten electrolyte, the cell being provided with non-carbon, metal-based anodes arranged to facilitate the circulation of electrolyte. As with these disclosures, however, much of the known prior art is merely concerned with metal oxides in general, and makes no mention of the metal oxides to be found in spent nuclear fuel.

On page 2, please amend the paragraph beginning at line 13 as follows:

In co-pending PCT patent application ~~WO 01/41152~~ WO-A-01/41152 there is disclosed a single step process for reducing to metallic form a metal oxide present in spent nuclear fuel, the process comprising cathodically electrolysis of the oxide in the presence of a molten salt electrolyte, the potential of the cathode being controlled so as to favour oxygen ionisation over deposition of the metal from the cations present in the molten salt.

On page 2, at line 25, please insert the following paragraph:

US-B-6540902 describes a similar single step process for reducing to metallic form a metal oxide present in spent nuclear fuel, the process comprising cathodically electrolyzing the oxide in the presence of a molten salt electrolyte, the potential of the cathode being controlled so as to prevent production of reductant metal from ions in the electrolyte, whilst the potential of the anode is controlled so as to prevent anode dissolution and gas evolution other than oxygen.

On page 2, please amend the paragraph beginning at line 26 as follows:

The present inventors have, however, now effected an improvement to the processes described in ~~WO 01/41152 which allows~~ WO-A-01/41152 and US-B-6540902, thereby allowing a more practical, efficient and financially viable process to be adopted in the production of metals from oxides. The new process is particularly beneficial in that it facilitates the removal of bolted and screwed fittings from the apparatus used for the production of the metal.

On page 3, under the heading, "Statements of the Invention," please amend the paragraph beginning at line 2 as follows:

Thus, according to a first aspect of the present invention there is provided an apparatus for performing a process for reducing to metallic form metal oxides, the metal oxides comprising metal oxides present in spent nuclear fuel, wherein the apparatus comprises an electrochemical cell which comprises a body or housing, a cathode container, and a cathode connector, said body or housing being maintained as the cathode, and said electrochemical cell being free from bolted or screwed fittings ~~the said apparatus being free from bolted or screwed fittings, and comprising an electrochemical cell which comprises a body or housing, a cathode container, and a cathode connector, wherein said body or housing is maintained as the cathode.~~

On page 4, please amend the paragraph beginning at line 11 as follows:

According to a second aspect of the present invention, there is provided a process for reducing to metallic form metal oxides, the said metal oxides comprising metal oxides present in spent nuclear fuel, the process comprising cathodically electrolysing the oxide in the presence of a molten salt electrolyte in an apparatus according to the first aspect of the invention, the potential of the cathode being controlled so as to favour oxygen ionisation over deposition of metal from the cations present in the molten salt.

On page 4, please amend the paragraph beginning at line 21 as follows:

Preferably, the oxide treated by the process according to the second aspect of the invention comprises ~~an oxide present in spent nuclear fuel~~. Typically the oxide comprises an actinide oxide, such as uranium oxide or irradiated uranium oxide, or mixed uranium/plutonium oxides. The uranium oxide is commonly uranium dioxide. Alternatively, the oxide may comprise the oxide of a metal such as zirconium or hafnium.

On page 4, amend the paragraph beginning at line 28 as follows:

~~In such a process, wherein the oxide comprises an oxide present in spent nuclear fuel, the fuel may be first treated mechanically to remove its zircaloy cladding before it is added to the electrolytic cell.~~ In the process, the fuel may be first treated mechanically to remove its zircaloy cladding before it is added to the electrolytic cell. Alternatively, the zircaloy cladding may be treated with the fuel. The fuel may require to be sheared into sections of small length prior to treatment in order to expose the oxide fuel to the molten salt.